

CLAIMS

1. A method of fast random access management of a DRAM-type memory, including the steps of:

dividing the memory into memory banks accessible independently in read and
5 write mode;

identifying an address (@b) of the bank concerned by a current request;

comparing the address of the bank concerned by a current request with addresses
of N-1 banks previously required, N being an integral number of cycles necessary to
execute a request; and

10 if the address of the bank concerned by a current request is equal to the address of
a bank corresponding to one of the N-1 previous requests, suspending and storing the
current request until the previous request involving the same bank is executed, otherwise,
executing it.

15 2. The method of claim 1, wherein the suspension operation includes
stacking the requests in a memory of first-in/first-out type.

3. The fast access DRAM management method of claim 1, further including
for the data reading, the steps of:

20 storing in an output FIFO register the data read during the first M cycles of
memory use; and

providing an output datum of the FIFO register, M cycles after each read request.

4. The fast access DRAM management method of claim 1, wherein the
25 memory is periodically refreshed line by line and bank by bank, and including the step of
comparing the address of the bank to be refreshed with the addresses of N-1 ongoing
requests and of the N following requests and delaying the refreshment if the address of
the bank to be refreshed corresponds to one of the bank addresses of the 2N-1 requests.

30 5. The fast access DRAM management method of claim 4, including the
steps of resuming the refreshment and interrupting the request succession after a
determined number of refresh cycle interruptions have occurred.

6. The fast access DRAM management method of claim 1, including the steps of:

storing N requests following the current request;

5 if the execution of the current request is suspended, executing one of the following requests not in conflict with the request being executed; and

if the executed request is a read request, arranging back the read information in the order of the executed read requests.

10 7. The fast access DRAM management method of claim 1, wherein the memory banks are distributed into sets accessible in parallel, whereby each set statistically only needs to process half of the requests.

8. The fast access DRAM management method of claim 1, wherein the
15 memory banks are distributed into several groups, the banks of a same group sharing the same bus, and wherein two requests can be simultaneously transmitted to two distinct groups.